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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,451	07/10/2003	Wesley L. Bratton	89989-0304678	3843

7590 01/06/2005

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EXAMINER

CYGAN, MICHAEL T

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,451

Applicant(s)

BRATTON ET AL.

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15,33-41 and 48-70 is/are allowed.
- 6) ☐ Claim(s) 1-14,16-25,27-31,42-47,71-73,77 is/are rejected.
- 7) ☒ Claim(s) 26,32 and 74-76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-14, 16-25, 27-31, 42-47, 71-73, and 77 are rejected under 35

U.S.C. 102(a), or alternatively under 35 U.S.C. 102(e), as being anticipated by Pope (US 6,321,595 B1). Pope discloses the claimed invention, a method and apparatus for characterizing a contaminant in a fluid flow system. The method comprises injecting a conservative (non-partitioning) and a number of interactive (partitioning) tracers into a flow system filled with liquid and gas, advecting the tracers along the flow system, extracting the tracers at a recovery point, measuring the concentration over a period of time, and determining the locations, volume, or composition of NAPL contaminants in the system; see entire document, especially column 5 through column 8. A specific contaminant may be located; see column 9 lines 20-23 and line 62 through column 10 line 38; see column 11 lines 19-31; see column 12 lines

61-64. Air (non-reactive) may be used as the injection fluid; see column 5 lines 1-2. Tracers may be reactive; see columns 5-6. Tracers interacting differently with each contaminant may be used; see column 10, lines 36+; multiple locations may be detected (column 10). Known flow rates are used (column 15 lines 48-61). As shown in Figures 3-6, characteristics of each tracer signal curve are compared; peak magnitudes are shown in Table 2. Partitioning ratios (measured and ideal) are known as expressed in Tables 3 and 4 (see column 16 lines 50-55). The ratio of partitioning and non-partitioning times as determined from the separation of their respective curves (including their mean time of arrival) is used to determine concentration (column 13 lines 16-38).

Apparatus for the above method is disclosed, including the use of an injection well (column 6 lines 58+), extraction apparatus leading to a gas chromatograph measurement system (column 7 lines 40+), and including a processor for analyzing the measurements (column 13 lines 25-27 and column 15 lines 63-67). Valves are used to inject pressurized tracers (column 15 lines 49-53).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope (US 6,321,595 B1).

With respect to claim 19, Pope teaches the claimed invention except for the source of pressurized air being a gas cylinder. However, such a source would have been obvious to one having ordinary skill in the art at the time the invention was made, since the use of gas cylinders is of notorious character in the art, and would have been obvious due to its well known advantages of portability and ability to control flow rate.

With respect to claim 73, Pope teaches the claimed invention except for the use of centroid measurement. However, such measurement would have been obvious to one having ordinary skill in the art at the time the invention was made, since the use of centroids is of notorious character in the art, and would have been obvious due to its well known advantages for determining aspects of a curve.

Allowable Subject Matter

3. Claims 15, 33-41, and 48-70 are allowed.
4. Claims 26, 32, and 74-76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-14 and 16-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gaseous tracers are disclosed by Tang (US 5,111,882), Sustek (US 4,223,727), Wellington (US 5,031,697), and Craig (US 4,742,873).
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER